Look And Record

Topic

Scene of crime procedures

Introduction

Using the correct procedures when investigating a crime assists the process of solving the crime. When the police patrol arrives at the scene of a serious crime, the officers secure the area to prevent any unauthorized access that might contaminate evidence. The crime scene is then scrutinized carefully, close attention being paid to the means of access to the area, the identification and positioning of all the objects present, conditions such as lighting, and weather (if outside). These observations are all recorded on a sketch. This sketch is used to make a scale drawing that identifies all the items found and shows exactly where they were found. Investigators can use such a drawing when interviewing witnesses to clarify their evidence. In this experiment, you will "secure" a crime scene and, taking precautions against contamination of evidence, make a sketch of the items found there. You will then convert your sketch into a scale drawing. This experiment could either be completed in class, where an area of the classroom could be identified as the "crime scene," or as an exercise at home where you could use your bedroom as the "crime scene." Before carrying out the experiment, you need to set the scene. Imagine a crime has been committed in the chosen area. In the example in this experiment, it is suggested that an intruder has thrown a brick through the window – leaving the brick lying on the floor and the mark of a footprint on the carpet.

Time required

1 hour

Materials

area chosen as the "crime scene," e.g., an area in the classroom or at home (the example shown in the diagrams in this experiment is based on a bedroom)
tape or string to secure the "crime scene"
paper and pencils
graph paper
tape measure
compass
calculator
thin latex gloves (optional)

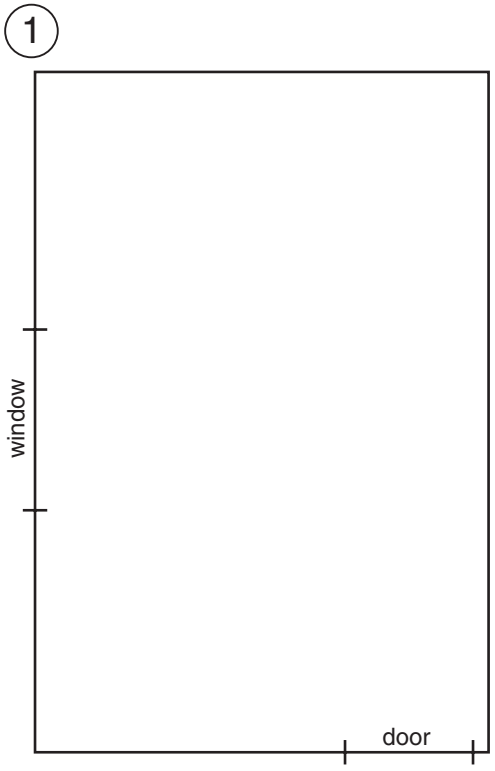
Safety note

Please read the general safety precautions.

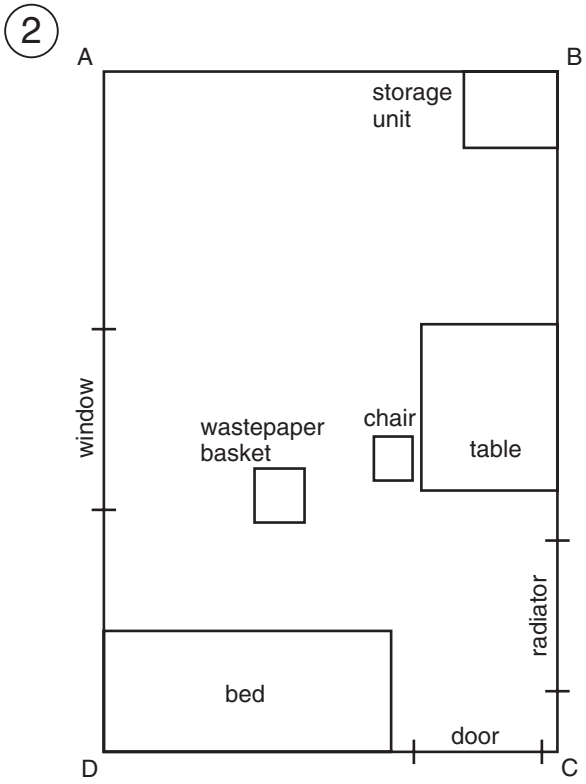
Procedure

First consider how you are going to work within the "crime scene" to avoid contaminating any evidence. You may want to cover your shoes with paper covers, but it should be sufficient to just remove your shoes. Similarly, you may want to use thin latex gloves when touching objects in the "crime scene."

1. Identify the area to be used as the "crime scene" and secure it. If at school, place a chair at each corner of the area to be used, and attach string or tape between the chairs to form a barrier. If at home, place tape across the door of the room to be used.
2. Using a blank sheet of paper, make a rough sketch of the area (see the example in diagram 1 below) indicating the positions of doors and windows, or any other possible area through which a "criminal" could have gained access to the "crime scene."

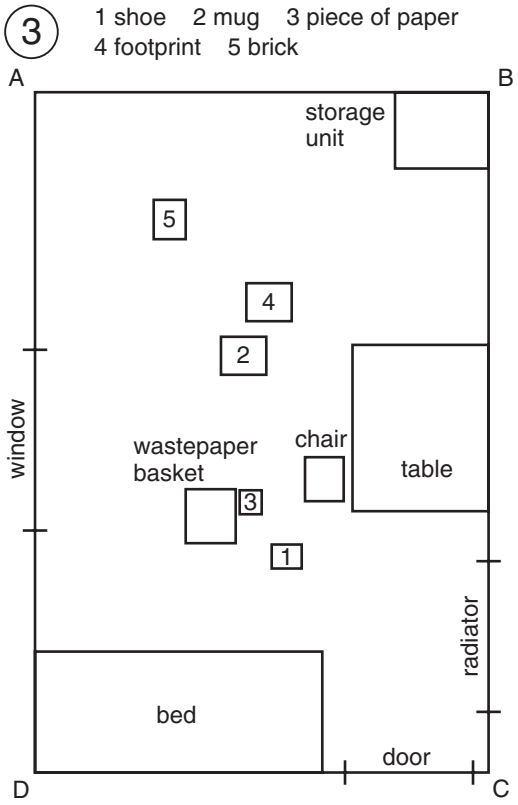


Sketch of the area under investigation

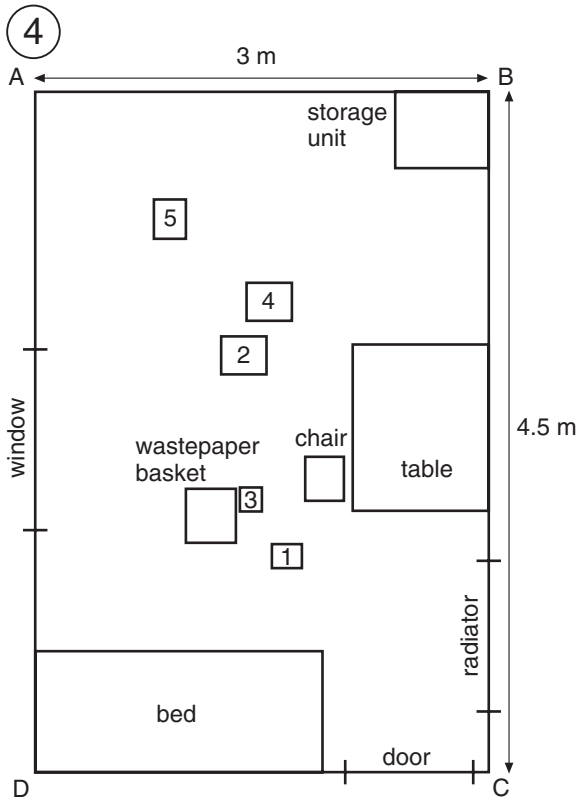


Sketch showing position of any large items at the "crime scene"

3. On your sketch, outline and name the positions taken by any large items of furniture and label the corners of the "crime scene" A, B, C, D (see the example in diagram 2 above).
4. Look again at the "crime scene" for small items in the area, e.g., a shoe, an empty coffee mug, a brick, a screwdriver lying on the floor, a wet footprint, a dirty sock on the bed, an overturned glass on the table, etc. Remember at this stage in the investigation you do not know what might be relevant to the investigation, so aim to record as much as possible. Indicate the positions of these items on your sketch and label them (see the example in diagram 3 on the next page).

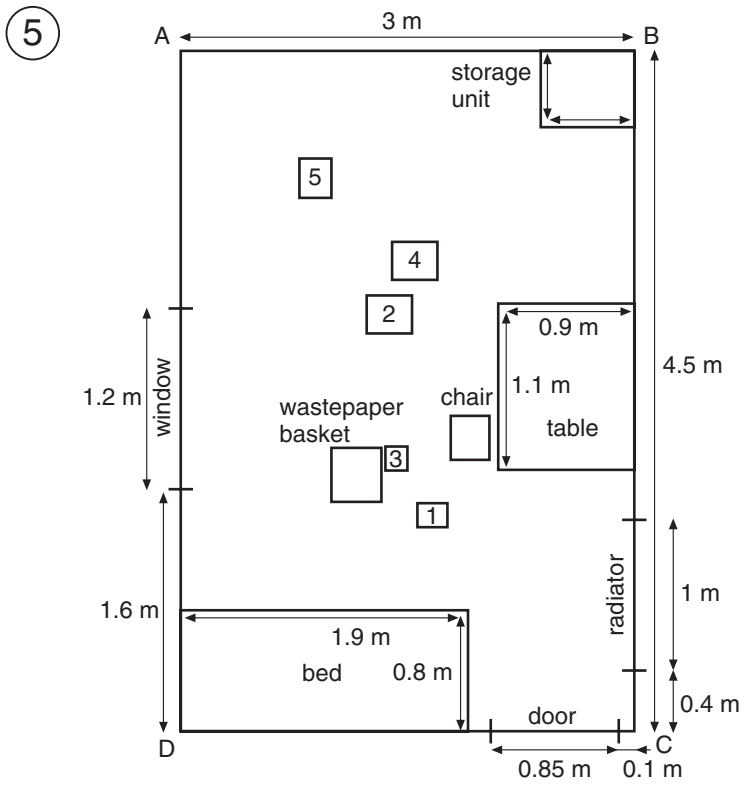


Sketch indicating position of small items at the "crime scene"



Sketch showing the dimensions of the "crime scene"

5. Using the precautions outlined above, enter the "crime scene." Using a tape measure, take the dimensions of the "crime scene" and write these on the appropriate line of your sketch (see the example in diagram 4 above).
6. Measure and record the sizes and positions of the doors, windows, and large pieces of furniture (see the example in diagram 5 opposite).



Sketch recording the positions of the large items at the "crime scene"

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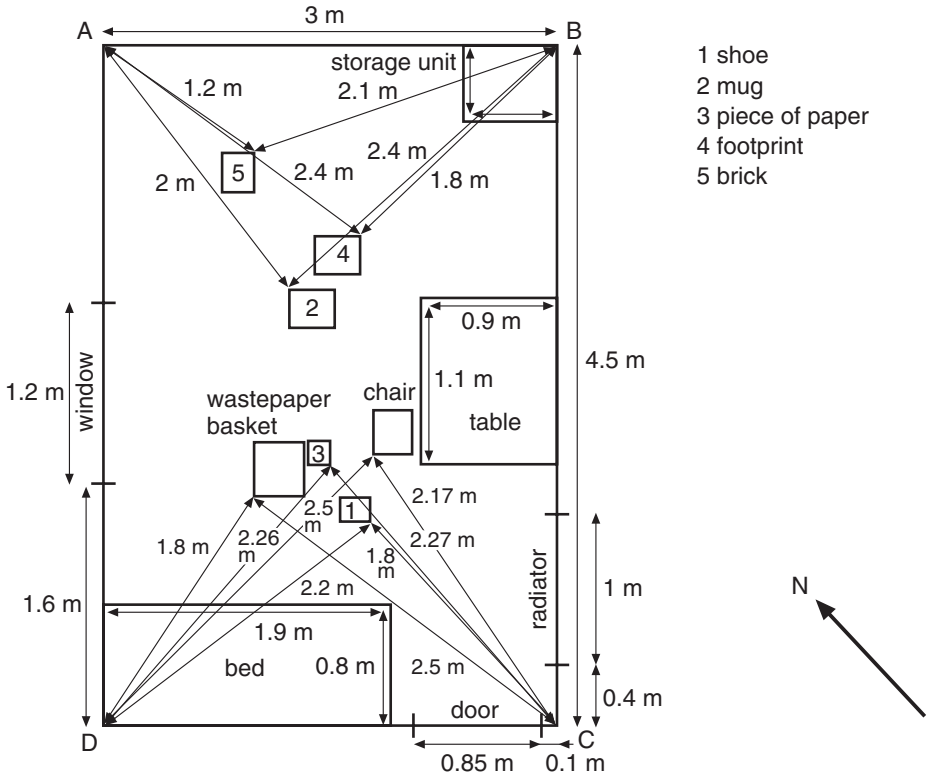

Sketch recording the positions of all the items at the "crime scene"

7. Measure and record the positions of the small items identified in step 4 by measuring the distance from two of the corners identified in step 3 (see the example shown in diagram 6 above).
8. To complete your sketch, use the compass to find the direction to find North. Show this on your sketch. (This will allow observations to be made about the direction in which light might have fallen on the "crime scene" from the Sun.)
9. To make a scale drawing of the "crime scene," calculate an appropriate scale with which to display the "crime scene" on graph paper. Transfer the measurements from your sketch to form a scale drawing on the graph paper.

Analysis

1. From your observations, can you deduce how a perpetrator could have gained access to the "crime scene?"
2. Do any observations suggest the perpetrator left by another route?

Want to know more?

1. A footprint near an open window would suggest that a perpetrator accessed the crime scene through the window.
2. An open door and a hastily discarded shoe (matching the print) might suggest the perpetrator left hastily through the door.

Observations made carefully and recorded accurately will enable deductions to be made about a crime, clarify the evidence given by witnesses, and enable a crime to be solved even years after it was committed. Although photography is now also used in observation of a crime scene, sketches identifying the actual positions of items are invaluable in analyzing a crime.

Special Safety Note To Experimenters

Each experiment includes any special safety precautions that are relevant to that particular project. These do not include all of the basic safety precautions that are necessary whenever you are working on a scientific experiment. For this reason, it is absolutely essential that you read, copy, and remain mindful of the General Safety Precautions that follow this note. Experimental science can be dangerous, and good laboratory procedure always includes carefully following basic safety rules. Things can happen very quickly while you are performing an experiment. Things can spill, break, even catch fire. There will be no time after the fact to protect yourself. Be prepared for unexpected dangers by following basic safety guidelines the entire time you are performing the experiment, whether or not something seems dangerous to you at a given moment.

We have been quite sparing in prescribing safety precautions for the individual experiments. We made this choice for one reason: We want you to take very seriously every safety precaution that is printed in this book. If you see it written here, you can be sure that it is here because it is absolutely critical to your safety.

One further note: The book assumes that you will read the safety precautions that follow, as well as those in the box within each experiment you are preparing to perform, and that you will remember them. Except in rare instances, the general precautions listed below will not be repeated in the procedure itself. It is up to you to use your good judgment and pay attention when performing potentially dangerous parts of the procedure. Just because the book does not say **BE CAREFUL WITH HOT LIQUIDS or DON'T CUT YOURSELF WITH THE KNIFE** does not mean that you should be careless when boiling water or cutting a section of a stem for microscope work. It does mean that when you see a special note to be careful, it is extremely important that you pay attention to it. If you ever have a question about whether a procedure or material is dangerous, wait to perform it until you find out from a qualified adult that it is safe.

GENERAL SAFETY PRECAUTIONS

Accidents caused by carelessness, haste, insufficient knowledge, or taking unnecessary risks can be avoided by practicing safety procedures and being alert while conducting experiments. Be sure to check the individual experiments in this book for additional safety regulations and adult supervision requirements. If you will be working in a lab, do not work alone.

PREPARING:

—Clear all surfaces before beginning experiments
—Read the instructions before you start
—Know the hazards of the experiments and anticipate dangers

PROTECTING YOURSELF:

—Follow the directions step-by-step; only do one experiment at a time
—Locate exits, fire blanket and extinguisher, gas and electricity shut-offs, eyewash, and first-aid kit
—Make sure there is adequate ventilation
—Act sensibly at all times
—Wear an apron and safety glasses
—Do not wear open shoes, loose clothing, or loose hair
—Keep floor and workspace neat, clean, and dry
—Clean up spills immediately, being careful to follow the recommended procedure for dealing with the spilt substance
—Never eat, drink, or smoke in the laboratory or workspace
—Do not eat or drink any substances tested unless expressly permitted to do so by a knowledgeable adult

USING EQUIPMENT WITH CARE:

—Set up apparatus far from the edge of the desk
—Use knives and other sharp or pointed instruments with caution
—Pull plugs, not cords, when removing electrical plugs

—Don't use your mouth to pipette liquids; use a suction bulb
—Check glassware is clean and dry before use
—Check glassware for scratches, cracks, and sharp edges
—Report broken glassware immediately so that it can be cleaned up by a responsible person
—Do not use reflected sunlight to illuminate your microscope
—Use only low voltage and current materials such as lantern batteries
—Be careful when using stepstools, chairs, and ladders

USING CHEMICALS AND BIOLOGICAL MATERIALS:
—Never taste or inhale chemicals
—Label all bottles and apparatus containing chemicals
—Read labels carefully
—Avoid chemical contact with skin and eyes (wear safety glasses, lab apron, and gloves)
—Do not touch chemical solutions
—Wash hands before and after using solutions
—Wipe up spills thoroughly
—Use sterile procedures when handling even common and harmless microorganisms
—Avoid contact with human blood
—Treat all living organisms with appropriate respect

HEATING SUBSTANCES:
—Wear safety glasses, apron, and gloves when boiling water
—Keep your face away from test tubes and beakers
—Use test tubes, beakers, and other glassware made of Pyrex™ or borosilicate glass
—Use alcohol-filled thermometers (do not used mercury-filled thermometers)
—Never leave apparatus unattended
—Use safety tongs and heat-resistant mittens
—If your laboratory does not have heat-proof workbenches, put your Bunsen burner on a heat-proof mat before lighting it
—Take care when lighting your Bunsen burner; use a Bunsen burner lighter in preference to wooden matches
—Turn off hot plates, Bunsen burners, and gas when you are done
—Keep flammable substances away from heat
—Keep sheets of paper and other flammable objects away from your Bunsen burner
—Have a fire extinguisher on hand

FIELDWORK:
—Be aware of environmental dangers (e.g., do not carry out fieldwork near dangerous roads, cliffs, or water)
—Remember that strong sunlight can be dangerous – pack sunscreen and a good supply of drinking water if you will be outside all day
—Never carry out fieldwork in areas where you cannot find your way to safety easily and quickly and never wander off on your own in search of new areas to study

FINISHING UP:
—Clean your work area and glassware (follow any instructions given by a supervising adult)
—Be careful not to return chemicals or contaminated reagents to the wrong containers
—Don't dispose of materials in the sink unless instructed to do so
—Wash your hands
—Clean up all residues and put in proper containers for disposal
—Dispose of all chemicals according to all local, state, and federal laws
—Dispose of all microbiological cultures by treatment with an appropriate disinfectant

BE SAFETY CONSCIOUS AT ALL TIMES